Claim Chart—Part I

U.S. Patent No. 6,184,473	Claims in BELLI Application	Support in BELLI Application
1. An electrical cable consisting essentially of a conductor,	55. An electrical cable consisting essentially of a conductor,	The specification discloses an electrical cable with a conductor (p. 4/ll. 1-2, 12-14).
a layer of insulation around said conductor	a layer of insulation around said conductor	The cable has an insulating layer around the conductor (p. 4/ll. 12-14).
and a material flowable at about 25° C. between the conductor and the layer of insulation which provides self-sealing properties to the cable,	and a material flowable at about 25° C. between the conductor and the layer of insulation which provides self-sealing properties to the cable,	Self-repairing material can be placed between the conductor and the insulating layer (p. 4/ll. 12-14 and 30-33). The self-repairing material is flowable at ambient temperature (p. 3/ll. 34-36 and p. 8/ll. 4-7), which is normally considered to be about 25°C (Hawley's Condensed Chemical Dictionary, 13th Edition, defines room temperature as an ambient temperature from 20-25°C).
wherein said material is a dielectric	wherein said material is a dielectric	The self-repairing material can be a dielectric (p. 6/ll. 4-6).
and has capacity, upon creation of discontinuity in the layer of insulation, of reestablishing continuity in the layer of insulation in a reversible manner,	and has capacity, upon creation of discontinuity in the layer of insulation, of reestablishing continuity in the layer of insulation in a reversible manner,	The self-repairing material has capacity, upon creation of discontinuity in the insulating layer, of re-establishing continuity in the insulating layer in a reversible manner (p. 4/ll. 25-29).
wherein said material is polyisobutene.	wherein said material is polyisobutene.	The self-repairing layer material can be polyisobutene (p. 10/l. 36 - p. 11/l. 3).

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2. The electrical cable of claim 1 wherein said material has a 100 gram needle penetration value greater than 100 tenths of a millimeter at 25° C.	56. The electrical cable of claim 55 wherein said material has a 100 gram needle penetration value greater than 100 tenths of a millimeter at 25° C. ☆	In addition to the support shown above for claim 55 (copied claim 1), at least one of the "particularly preferred" polyisobutenes (Vistanex®) (p. 11/l. 2) of the present application has a 100 gram needle penetration value greater than 100 tenths of a millimeter at 25°C, according to Society of Automotive Engineers standard AMS 210-10 (see http://www.exxonmobilchemical.com/, copy attached as Exhibit E).
3. The electrical cable of claim 1 wherein the conductor is formed by a plurality of wires stranded together.	57. The electrical cable of claim 55 wherein the conductor is formed by a plurality of wires stranded together.	In addition to the support shown above for claim 55 (copied claim 1), the specification discloses that the conductor generally consists of metal wires plaited together using standard techniques (p. 16/ll. 35-37).
4. An electrical cable as set forth in claim 1 having empty spaces formed during or after a cable manufacturing process, but before installing the cable wherein the empty spaces formed prior to installation of the cable, during installation of the cable, and after the cable is placed in service, within said insulation layer and between said insulation layer and the conductor, contain the material which provides the cable with self-sealing properties.	58. An electrical cable as set forth in claim 55 having empty spaces formed during or after a cable manufacturing process, but before installing the cable wherein the empty spaces formed prior to ☆ installation of the cable, during installation of the cable, and after the cable is placed in service, within said insulation layer and between said insulation layer and the conductor, contain the material which provides the cable with self-sealing properties.	In addition to the support shown above for claim 55 (copied claim 1), the specification discloses that during various stages of the life of an electrical cable, including the manufacturing process, the cable can be stressed and damaged, which means that discontinuities (such as empty spaces) may be formed at any stage of the cable life, including prior to installation of the cable, during installation of the cable, and after the cable is placed in service, and can be formed within the insulating layer and/or between the insulating layer and the conductor (p. 1/ll. 16-21 and p. 2/ll. 35-39). Additionally, the specification discloses providing the flowable self-repairing material during the manufacturing process to fill discontinuities (such as empty spaces) that may be formed (p. 3/ll. 13-29).

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5. A method of making an insulated electrical cable having empty spaces formed during or after a cable manufacturing process, but before installing the cable which mitigates the effects of voids, punctures, or cracks formed in an insulation prior to installation of the cable, during an installation of the cable, and after the cable is placed in service comprising the steps of:	59. A method of making an insulated electrical cable having empty spaces formed during or after a cable manufacturing process, but before installing the cable which mitigates the effects of voids, punctures, or cracks formed in an insulation prior to installation of the cable, during an installation of the cable, and after the cable is placed in service comprising the steps of:	The specification discloses that during various stages of the life of an electrical cable, including the manufacturing process, the cable can be stressed and damaged, which means that discontinuities (such as empty spaces) may be formed at any stage of the cable life, including prior to installation of the cable, during installation of the cable, and after the cable is placed in service, and can be formed within the insulating layer and/or between the insulating layer and the conductor (p. 1/ll. 16-21 and p. 2/ll. 35-39). Additionally, the specification discloses providing the flowable self-repairing material during the manufacturing process to fill discontinuities/empty spaces that may be formed (p. 3/ll. 13-29).
(a) forming a conductor	(a) forming a conductor	The specification discloses an electrical cable with a conductor (p. 4/ll. 1-2, 12-14).
(b) applying a layer of dielectric material flowable at about 25° C. which provides self-sealing properties on the exterior of the conductor,	(b) applying a layer of dielectric material flowable at about 25° C. which provides self-sealing properties on the exterior of the conductor,	Self-repairing material is placed between the conductor and the insulating layer (p. 4/ll. 12-14 and 30-33). The self-repairing material can be a dielectric (p. 6/ll. 4-6). The self-repairing material is flowable at ambient temperature (p. 3/ll. 34-36 and p. 8/ll. 4-7), which is normally considered to be about 25°C (Hawley's Condensed Chemical Dictionary, 13th Edition, defines room temperature as an ambient temperature from 20-25°C).
wherein the material is polyisobutene; and	wherein the material is polyisobutene; and	The self-repairing layer material can be polyisobutene (p. 10/l. 36 - p. 11/l. 3).
(c) forming an insulation layer around the conductor.	(c) forming an insulation layer around the conductor.	The insulating layer can be formed around the conductor and the layer of self-repairing material (p. 4/ll. 12-14).

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6. The method of claim 5 wherein the conductor is formed by a plurality of wires stranded together.	60. The method of claim 59 wherein the conductor is formed by a plurality of wires stranded together.	In addition to the support shown above for claim 59 (copied claim 5), the specification discloses that the conductor generally consists of metal wires plaited together using standard techniques (p. 16/ll. 35-37).
7. The method of claim 6 wherein said material has a 100 gram needle penetration value greater than 100 tenths of a millimeter at 25° C.	61. The method of claim 60 wherein said material has a 100 gram needle penetration value greater than 100 tenths of a millimeter at 25° C.	In addition to the support shown above for claims 59 and 60 (copied claims 5 and 6), at least one of the "particularly preferred" polyisobutenes (Vistanex®) (p. 11/l. 2) of the present application has a 100 gram needle penetration value greater than 100 tenths of a millimeter at 25°C, according to Society of Automotive Engineers standard AMS 210-10 (see http://www.exxonmobilchemical.com/, copy attached as Exhibit E).
8. The method of claim 5 wherein said material flows into voids, punctures, or cracks in the insulation formed prior to the installation of the cable.	62. The method of claim 59 wherein said material flows into voids, punctures, or cracks in the insulation formed prior to the installation of the cable.	In addition to the support shown above for claim 59 (copied claim 5), it is implicit and understood by one skilled in the art from the disclosure that the flowable self-repairing material can mitigate the effects of voids, punctures, and/or cracks formed in the insulating layer prior to the installation of the cable by flowing into such voids, punctures, and/or cracks.
9. The method of claim 5 wherein said material flows into space between the conductor and the insulation formed prior to the installation of the cable.	63. The method of claim 59 wherein said material flows into space between the conductor and the insulation formed prior to the installation of the cable.	In addition to the support shown above for claim 59 (copied claim 5), it is implicit and understood by one skilled in the art from the disclosure that the flowable self-repairing material can flow into space between the insulating layer and the conductor formed prior to installation of the cable.

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10. The method of claim 5 wherein said material flows into space between the conductor and the insulation formed during the installation of the cable.	64. The method of claim 59 wherein said material flows into space between the conductor and the insulation formed during the installation of the cable.	In addition to the support shown above for claim 59 (copied claim 5), it is implicit and understood by one skilled in the art from the disclosure that the flowable self-repairing material can flow into space between the insulating layer and the conductor formed during the installation of the cable.
11. The method of claim 5 wherein said material flows into voids, punctures, or cracks in the insulation formed during the installation of the cable.	65. The method of claim 59 wherein said material flows into voids, punctures, or cracks in the insulation formed during the installation of the cable.	In addition to the support shown above for claim 59 (copied claim 5), it is implicit and understood by one skilled in the art from the disclosure that the flowable self-repairing material can mitigate the effects of voids, punctures, and/or cracks formed in the insulating layer during the installation of the cable by flowing into such voids, punctures, and/or cracks.
12. The method of claim 5 wherein said material flows into voids, punctures, or cracks in the insulation formed after the cable is placed in service.	66. The method of claim 59 wherein said material flows into voids, punctures, or cracks in the insulation formed after the cable is placed in service.	In addition to the support shown above for claim 59 (copied claim 5), it is implicit and understood by one skilled in the art from the disclosure that the flowable self-repairing material can mitigate the effects of voids, punctures, and/or cracks formed in the insulating layer after the cable is placed in service by flowing into such voids, punctures, and/or cracks.
13. The method of claim 5 wherein said material flows into space between the conductor and the insulation formed after the cable is placed in service.	67. The method of claim 59 wherein said material flows into space between the conductor and the insulation formed after the cable is placed in service.	In addition to the support shown above for claim 59 (copied claim 5), it is implicit and understood by one skilled in the art from the disclosure that the flowable self-repairing material can flow into space between the insulating layer and the conductor formed after the cable is placed in service.

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14. The method of claim 5 including applying a water barrier material over the conductor before applying the self-sealing material in step (b).	68. The method of claim 59 including applying a water barrier material over the conductor before applying the self-sealing material in step (b).	In addition to the support shown above for claim 59 (copied claim 5), the conductor may be pre-coated with at least one insulating barrier before applying the self-repairing material (p. 17/l. 38 - p. 18/l. 1). The at least one insulating barrier can be a polymer material such as polypropylene ("PP") (Example 6, pp. 24-30) or silane-crosslinked linear low-density polyethylene ("LLDPE") (Example 7, pp. 30-31). As disclosed by U.S. Patent No. 6,184,473, such a polymer material can be a water barrier material (c. 7/l. 6).
15. The method of claim 14 wherein the water barrier is a polymer sheet.	69. The method of claim 68 wherein the water barrier is a polymer sheet.	In addition to the support shown above for claims 59 and 68 (copied claims 5 and 14), the specification discloses applying the PP and/or LLDPE by extrusion (Example 6, pp. 24-30 and Example 7, pp. 30-31). Application of polymers such as PP and/or LLDPE over a conductor in the form of a polymer sheet is a commonly used, well-known technique providing a substantially equivalent result to application by extrusion.

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16. A method for imparting to a cable comprising a conductor, at least one insulating layer, and a material having a capacity of self-repairing the at least one insulating layer,	70. A method for imparting to a cable comprising a conductor, at least one insulating layer, and a material having a capacity of self-repairing the at least one insulating layer,	The specification discloses a "method for imparting to a cable comprising a conductor and at least one coating layer a capacity of self-repairing the coating layer" (p. 4/ll. 20-23). Also, originally-filed claim 50: "[m]ethod for imparting to a cable comprising a conductor and at least one coating layer a capacity of self-repairing the coating layer." The at least one coating layer may be one or more insulating coating layers (p. 4/ll. 7-9 and 15-17).
the method comprising providing the cable with an inner layer comprising said material having the capacity, upon creation of a discontinuity in the at least one insulating layer, of reestablishing a continuity in the at least one insulating layer in a reversible manner,	the method comprising providing the cable with an inner layer comprising said material having the capacity, upon creation of a discontinuity in the at least one insulating layer, of reestablishing a continuity in the at least one insulating layer in a reversible manner,	The method comprises "providing the cable with an inner layer comprising a material having the capacity, upon creation of a discontinuity in the coating layer, of re-establishing the continuity in the coating layer in a reversible manner" (p. 4/ll. 24-29). Also, originally-filed claim 50: "the said method comprising providing the cable with an inner layer comprising a material having the capacity, upon creation of a discontinuity in the coating layer, of re-establishing the continuity in the coating layer in a reversible manner." Once again, the at least one coating layer may be one or more insulating coating layers (p. 4/ll. 7-9 and 15-17).
and wherein the material is polysiobutene.	and wherein the material is polyisobutene.	The self-repairing layer material can be polyisobutene (p. 10/l. 36 - p. 11/l. 3).

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17. The method according to claim 16 wherein the material is capable of at least partially filing the discontinuity without leaking from the cable in an uncontrolled manner.	71. The method according to claim 70 wherein the material is capable of at least partially filling the discontinuity without leaking from the cable in an uncontrolled manner.	In addition to the support shown above for claim 70 (copied claim 16), the specification discloses that the material of the inner layer can fill up, at least partly, the discontinuity (p. 3/ll. 19-27). The flowability of the material of the inner layer is predetermined so as to prevent the material from leaking in an uncontrolled manner from the cable (p. 3/ll. 34-39). Also, originally-filed claim 51: "[m]ethod according to Claim 50, in which the material of the inner layer is capable of at least partially filling the discontinuity without leaking from the cable in an uncontrolled manner."

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18. A method of manufacturing a cable having a layer of self-repairing material, which has a capacity, upon creation of a discontinuity in an insulating layer, of reestablishing continuity in the insulating layer in a reversible manner, comprising the steps of:	72. A method of manufacturing a cable having a layer of self-repairing material, which has a capacity, upon creation of a discontinuity in an insulating layer, of reestablishing continuity in the insulating layer in a reversible manner, comprising the steps of:	The specification discloses a process for manufacturing a cable having a layer of self-repairing material (p. 18/ll. 9-11). The self-repairing material has the "capacity, upon creation of a discontinuity in the coating layer, of re-establishing the continuity in the coating layer in a reversible manner" (p. 4/ll. 25-33). And the at least one coating layer may be one or more insulating coating layers (p. 4/ll. 7-9 and 15-17). Also, originally-filed claim 52: "[p]rocess for manufacturing a cable having a layer of self-repairing material, comprising the following steps."
(a) depositing the self-repairing material, maintained in a fluid state, on a cable core;	(a) depositing the self-repairing material, maintained in a fluid state, on a cable core;	The method comprises "depositing the self-repairing material, maintained in a fluid state, on a cable core" (p. 18/ll. 13-14). Also, originally-filed claim 52: "(i) depositing the self-repairing material, maintained in a fluid state, on a cable core."
wherein the self-repairing material is polyisobutene, and	wherein the self-repairing material is polyisobutene, and	The self-repairing layer material can be polyisobutene (p. 10/l. 36 - p. 11/l. 3).
(b) forming the layer of self-repairing material so as to obtain a uniform layer of a predetermined thickness.	(b) forming the layer of self-repairing material so as to obtain a uniform layer of a predetermined thickness.	The method comprises "forming the said layer of self-repairing material so as to obtain a uniform layer of a predetermined thickness" (p. 18/ll. 15-17). Also, originally-filed claim 52: "(ii) forming the said layer of self-repairing material so as to obtain a uniform layer of a predetermined thickness."